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## **Abstract**

Sustained access and achieving battlespace superiority in forward theaters is central to the Sea Shield concept, a cornerstone of the Navy's Sea Power 21 vision for the future. This essay addresses an issue which threatens our joint forces ability to rapidly gain access to littoral waters when access is denied by hostile submarines. Since the end of the Cold War, Combatant and Force Commanders have allowed U.S. Anti-Submarine Warfare (ASW) skills to atrophy. This essay shows that while military leaders have long noted this deficiency, little action has been taken to correct the situation. A combination of fewer ASW assets being available, an increase in competing missions, and a lack of a perceived credible submarine threat have all contributed to Commanders focusing less on ASW force readiness. However, in the past decade, the world-wide submarine threat has become more, not less, challenging. This essay focuses on the extensive time required to properly prepare the undersea battlespace. To provide our Joint Forces rapid access, the Commanders need to be preparing the undersea battlespace and our ASW forces today. This essay concludes with recommendations to ensure our ASW forces are ready to provide rapid access.

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**Newport, R.I.**

**GAINING RAPID ACCESS FOR THE JOINT FORCES:**  
**ARE WE READY?**

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

**Signature:**\_\_\_\_\_

16 May 2003

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## **Introduction**

The year is 2006. Having been engaged in a rapid military modernization, China has gained confidence in its naval forces and decided to blockade Taiwan. With most of China's submarines at sea and the sinking of a ship outside Taipei, insurance brokers revoked coverage of merchant shipping in the associated waters. The resulting crash of the Taipei stock market has led to an estimate that if the blockade is not broken or halted within two weeks, Taiwan will capitulate to Chinese demands. The Joint Force Commander (JFC) has decided not to attempt a blockade penetration without first eliminating the submarine threat. The President asks how long it will take – and how risky it will be – to eliminate the submarine threat. The Chairman Joint Chiefs of Staff (CJCS) tells him it is unlikely that we can get the job done in two weeks. The President elects not to challenge the blockade and defers to the United Nations to resolve the issue.

This fictional scenario highlights a weakness that exists in our current military forces. My thesis is that the United States' ability to conduct Anti-Submarine Warfare (ASW) operations has significantly degraded since the end of the Cold War. While some senior leaders have recognized this, I will show that little effective action has been taken to correct the situation in the near- and mid-term. This paper will make the case that effective ASW operations begin long before the breakout of hostilities. It will also demonstrate that Combatant Commanders may not be employing ASW assets to adequately prepare tomorrow's undersea battlespace, making it more likely that ASW forces will be unable to execute their mission in time to meet operational objectives.

To make my case, I will begin by providing some historical context about U.S. ASW operations and their role in ending the Cold War. This discussion will include a description

of undersea battlespace preparation and why this element of Operational Art is so important to the conduct of ASW operations. I will then address how most analysts expect the undersea environment and submarine threat to evolve in the future. Next, I will show what happened to our ASW skills over the past decade. While declining resources contributed to our ASW skill erosion, this paper will highlight other factors which also led to atrophy of this vital capability. With the case made that our ASW skills are in decline and yet vital to implementation of our Naval Strategy, I will offer recommendations to demonstrate what Combatant Commanders must do to ensure we are prepared for the next fight.

## **Background**

China would not be the first land power to challenge a maritime nation's sea supremacy by investing disproportionately in submarines.<sup>1</sup> During the Cold War, the Soviet Union invested heavily in submarines. While the U.S. made large investments in submarines to counter the Soviets, our submarines have not always been the dominant ASW platform. In WWII, submarines were primarily used as anti-surface platforms with ASW being conducted by surface ships and aircraft. By the mid-1900s, U.S. submarines had established themselves as part of the ASW team. In 1960, with the launching of the quiet, high-speed USS THRESHER (SSN-593), submarines became the dominant member.<sup>2</sup> By aggressively pursuing technological advances and continually improving tactics and training, the U.S. was able to maintain quieter and more capable submarines than the Russians. But U.S. submarines were not the only platforms used to counter the Russian submarine threat. The Navy used a system of fixed undersea acoustic sensors to cue other assets when a Soviet submarine passed over. The U.S. also used P-3 Patrol Aircraft, surface warships,

Surveillance Towed Array Sonar System (SURTASS) ships, and other national and foreign intelligence assets to collect information on the Soviet submarines.

It was the U.S. SSNs, however, that were used most effectively to collect information on Soviet submarines. Intelligence, surveillance and reconnaissance (ISR) missions conducted by SSNs have long been shrouded in secrecy. But these missions and other special operations were key to getting inside the Soviets decision loop. Our SSNs, by invisibly shadowing the Russians, gained an understanding of their motivations, obtained proof of their actions, and allowed us to determine what they valued. While the exploits of our SSN missions during the Cold War and details of exactly how they “prepared the battlespace” are still largely classified, recently declassified documents give us an indication of how dominant the U.S. SSNs became. “In 1978 USS BATFISH trailed a Soviet submarine for 50 days as she patrolled off the east coast of the U.S.”<sup>3</sup> The BATFISH knew exactly where the Soviet submarine went on an hourly basis. The intelligence gained by missions like this were invaluable to Combatant Commanders in preparing the battlespace.

### **Battlespace Preparation**

Today, Joint Intelligence Preparation of the Battlespace (JPIB) assists JFCs in defining likely or potential adversary Courses of Action (COA), as well as providing indicators that suggest the adversary has embarked on a specific COA. Even before ‘joint’ came to the forefront in U.S. doctrine, American submariners, as already indicated, knew the importance of preparing the battlespace. The submarine is uniquely capable of gaining information on the undersea battlespace. Satellites and other platforms have limited capability to scan the ocean depths, especially in the often denied littoral areas of tomorrow’s potential hot spots. Submarines provide operational commanders the critical capabilities they

need to prepare and shape the battlespace. Operating in the littoral waters of an enemy, U.S. submarines can gain valuable intelligence on the undersea, surface and near shore environment. Outfitted with a capable sensor suite, and operating well inside an enemy's denied area, submarines are often the only viable asset that can provide this essential information to assist commanders in making timely, informed decisions. Used properly by the Combatant Commanders, submarines act as an enabling force, paving the way for the optimum employment of other joint forces while minimizing the risk to those same forces.

Adequate preparation of the undersea battlespace is difficult, requires many resources, and can take years to accomplish. The undersea environment can be highly variable from one location to another. Currents, eddies, seasons, marine activity, shipping traffic, weather, depth of water, bottom topography, salinity and many other factors impact the transmission of sound through the water. Since acoustics are the primary means of detecting and tracking enemy submarines, to have command of the battlespace we must monitor and know how these factors vary. Undersea battlespace preparation includes learning as much about the enemy as possible. One must ascertain acoustic signatures, tactics, capabilities, and other information without the potential enemy knowing we are collecting the data. Due to our potential adversaries operating infrequently at sea, and with limited collection assets, it can take years before a useful and reliable picture can be drawn.

While history has shown that undersea battlespace preparation is long and difficult, a glimpse into the future reveals that it is only going to become more challenging. Unlike the Soviets, the submerged threat of tomorrow is likely to be located in enemy controlled littoral waters. Here, the background noise levels are higher, the bottom type can cause more transmission loss, and other factors can cause significant problems for active transmissions.



“For the watchstander, the littoral environment presents the epitome of information overload. Contact management in the littoral environment stresses, and often exceeds, human cognitive, memory, and attentional abilities.”<sup>4</sup> While the enemy has to face the same challenges, they have a distinct advantage, as it is their waterspace and they know the environment best. In contrast to what we knew about the Soviet Union, our “knowledge of potential sub threats is limited.”<sup>5</sup> To facilitate ASW operations in the future, our understanding of the rest of the world potential adversaries needs to improve.

### **The Future Threat**

Even without a peer competitor, it is essential that we prepare the undersea battlespace and have a capable ASW force. While assured access is not a new concept for the Submarine Force, it has recently been formalized as a key element of Sea Shield, a cornerstone of the Navy’s Sea Power 21 vision for the future. Sustained access and achieving battlespace superiority in forward theaters is central to the Sea Shield concept. Currently, and for the foreseeable future, the U.S. submarine force has guaranteed access. Our submarines can and do go where they want, when they want. But in terms of access for the rest of the Joint Force, there is no current guarantee, at least not without a potentially significant reduction in operational tempo or momentum.

One of the major future challenges to our assured access of the littorals is opposing submarines. While the number of submarines worldwide is in decline, the general quality of submarine fleets is rising.<sup>6</sup> Worldwide, there is a total of almost 500 submarines operated by 40 nations.<sup>7</sup> Of the 268 attack submarines in the Pacific region, a majority of these are not considered our “friends.”<sup>8</sup> Russia still has a force of some sixty nuclear attack and capable diesel submarines, and they have maintained a credible, albeit smaller, nuclear powered

ballistic missile submarine force.<sup>9</sup> India has signed a deal with Russia to lease two capable Akula-class nuclear powered submarines.<sup>10</sup> The Chinese recently purchased eight new Kilo-class submarines from Russia, are deploying the Russian supercavitating Skval torpedo which can travel in excess of 200 knots, and are building its own new nuclear and diesel submarines. The diesels will likely carry the Air Independent Propulsion (AIP) system, allowing them to remain submerged for up to two weeks without raising a mast to recharge its battery. This will largely eliminate our ability to locate diesel submarines via radar reflection of the snorkel mast. The Chinese are also developing submarine ASW tactics as a priority and improving joint operability with its forces, all in an attempt to imitate successful U.S. practices.<sup>11</sup> The Director of Naval Intelligence has stated “the proliferation of submarine technology is the most significant long-term submarine challenge facing the U.S. Navy as we approach the 21<sup>st</sup> century.”<sup>12</sup> Clearly, the post Cold War submarine challenge appears to be growing rather than declining.

### **Eliminating the Submarine Threat**

Given the current and foreseeable capabilities of our submarine force, it could be argued that our SSNs, alone, could go in, locate and sink all the hostile submarines. To understand why we need other ASW forces to guarantee rapid access, one needs to look at why other countries are acquiring submarines. In simplistic terms, even a modestly capable diesel submarine gives its owner a seat at the big table. As the ideal asymmetric weapon for a country that can not afford a substantial naval force, the diesel submarine is “capable of creating political and military effects that are out of proportion to the effort invested in their operations.”<sup>13</sup> It is not difficult for our adversaries to detect the “United States’ extreme aversion to casualties in post Cold War conflicts over less than vital interests.”<sup>14</sup> Faced with

the strong possibility of losses at sea, the Navy would be forced to eliminate the diesel submarine threat before continuing to establish access. Without sufficiently capable ASW forces, it could take a long time to eliminate the threat. Our current submarine force could in all likelihood get the job done. But how long will it take? “A delay of several weeks during the halting phase of a Major Regional Conflict (MRC) might not be a war stopper all by itself, but it is important to understand the consequences for current Time Phased Force Deployment List (TPFDL) timelines, which assume closure of millions of square feet of pre-positioned sealift within the first two weeks of the start of a MRC.”<sup>15</sup> With a less capable ASW force, the Combatant Commander may not meet his TPFDL timelines or accomplish his objectives.

Sufficient guidance exists for the Combatant Commanders to have an appreciation of the challenges in conducting ASW operations and understand the implications of failing to conduct such operations in a timely manner. The Navy’s ‘Littoral Anti-Submarine Warfare Concept’, produced by the Naval Doctrine Command in 1998, points out that today “protracted sanitization operations, requiring a significant operational pause in advance of the main military operation are required to prevent unacceptable losses to enemy submarines.” It goes on to point out that “while successful ASW alone will not ensure successful completion of the mission, the disproportionate effect of a single enemy submarine may be enough to ensure failure. The reality or merely the threat of enemy submarine operations undermines the ability of joint forces to project power ashore.”<sup>16</sup> Our “lack of tolerance for losses could transform a rapid deployment or strike operation into a long, protracted evolution.”<sup>17</sup> To prevent this from happening the Combatant Commander needs to ensure that the ASW forces are prepared to promptly eliminate or neutralize hostile submarines that threaten joint forces.

Properly conducted, ASW is a team sport that requires the combination of diverse capabilities in a challenging environment. Even proficient ASW forces find ASW operations to be difficult. In the Falklands War of 1982, a lone Argentine diesel submarine, the San Luis, operated in the vicinity of the British task force (more than 800 miles from her home port) for more than a month. Facing the San Luis were parts of NATO's North Atlantic ASW group (including nuclear attack submarines, and 24-hour per day airborne ASW operations), arguably one of the most experienced ASW forces in the world at the time.<sup>18</sup> Despite expending over 200 ASW weapons at the San Luis (all at false targets – San Luis was never really detected), the diesel submarine still was able to shoot several torpedoes at British ships. Only a fault with the San Luis' fire control system saved the British.<sup>19</sup> I contend that in a similar conflict today, unlike the British, the United States would not bring the bulk of its forces into denied waters until the submarine threat is found and eliminated or contained.

### **Our ASW Capabilities Post Cold War**

Over the past decade, the ability of the United States to conduct effective and joint ASW operations has been degraded. The influences that have led to that decline are many, including a reduction in ASW resources, the growth of competing missions, a shift in focus to strike operations, and the perceived lack of a credible and imminent ASW threat.

While all U.S. ASW forces have seen a post-Cold-War decline in resources, one only needs to look at the submarine force to see the impact these reductions have had on its ability to conduct ASW related operations. In 1987, the submarine force peaked at ninety-eight nuclear powered fast attack SSNs.<sup>20</sup> Following significant reductions and early deactivations, that force of SSNs stands at 54. When the next U.S. SSN enters the fleet in 2004 it will be the first submarine commissioned since USS Connecticut in 1998. This will

“end an almost six year period with no new submarine commissionings – the longest hiatus since the first submarine entered the U.S. inventory over 100 years ago.”<sup>21</sup> But, the significance of these cuts cannot be examined without a look at mission requirements.

While the number of assets have been reduced, the number of required missions for SSNs and other ASW forces have not declined. Several studies have been conducted over the past decade to determine how many submarines the United States needs. One of the most credible and recent studies was the JCS Attack Submarine Study released in 1999.<sup>22</sup> The study looked at the Combatant Commanders mission requirements to determine the right size for the submarine force. The study, mandated by the 1997 Quadrennial Defense Review, indicated that the Combatant Commanders would need 68 SSNs in 2015 and 76 SSNs in 2025 to meet all critical national collection requirements.<sup>23</sup> Critical, in this case, refers to requirements that are vital to U.S. national survival. Even with 68 SSNs, a significant number of Combatant Commander highly desired missions (nearly 60%) would not be accomplished.<sup>24</sup> During the same years that the Submarine Force saw its fleet cut in half, the volume of nationally tasked worldwide ISR missions doubled.<sup>25</sup> With a current inventory of 54 SSNs and the possibility that we will see fewer SSNs in the future, it is clear that the U.S. does not have enough submarines to conduct all the necessary missions.

The Cold War era of tracking and chasing the Soviet submarines has been over for over a decade and the United States has not had to face a hostile submarine in battle since World War II. These facts, together with the inability of some to see a credible submarine threat in the near-future, may be contributing to less focus being placed on our ASW forces. If the Combatant Commander does not see an imminent submarine threat, he is less likely to assign resources to gaining intelligence related to future submarine threats. Unless the

Combatant and Force Commanders keep in mind the time frame necessary to properly train and operate an effective ASW force and the time needed to adequately prepare the undersea battlespace, the ‘operational pause’ required to eliminate future threats may be unacceptable.

### **Impact of fewer resources and more missions**

The impact of having fewer ASW forces and more missions has been significant. It has resulted in not being able to conduct all the desired missions, less involvement in ASW exercises, less ASW tactics development, less understanding of potential adversaries, higher OPTEMPO for forces, and an overall less capable ASW force.

In 1999, 365 submarine days (10 submarines worth of ISR days), tasked at the highest level of government, were not executed due to competing requirements.<sup>26</sup> In fiscal year 2003, the submarine force is expected to be able to satisfy only 35 percent of fleet service requests.<sup>27</sup> In the first nine months of 1999, 109 days of planned ASW exercises in the EUCOM theater were missed and in the Pacific, 10 planned bilateral exercises were missed.<sup>28</sup> The Commander Naval Submarine Forces, pointed out in 2002 that he often had to reduce the presence of submarines in fleet battle experiments.<sup>29</sup>

Several naval leaders have pointed out that we need to know more about our potential adversaries. While assigned as Pacific Combatant Commander, Admiral Fargo commented that “in contrast to what we knew about the Soviet Union, our understanding of the rest of the region [Pacific Theater] is minuscule.”<sup>30</sup> RADM A. Konetzni, when he was SUBPAC, said that gaps in ISR missions challenge our ability to maintain the knowledge superiority that must underpin our forward presence.<sup>31</sup> In the past few years, some Navy officials have told Congress that the SSN force is overworked. In 2002, Commanders of the Atlantic and

Pacific submarine fleets said their subs cannot sustain the high tempo for another year.<sup>32</sup>

Interestingly, with the war in Iraq, many have had to do just that.

Few would argue that our ASW forces and their skills have degraded, especially in shallow-water. Four recent reports have concluded that the Navy's shallow-water ASW proficiency requires improvement.<sup>33</sup> Admiral Walter Doran, Pacific Fleet Commander, stated in January, 2003 that "our ASW skills and technology atrophied."<sup>34</sup> Admiral Natter, Commander of the Atlantic Fleet, recently expressed concerns to the CNO that submarines, overburdened with the war on terrorism, were neglecting their regular missions.<sup>35</sup> Even the CNO recently ordered a task force to examine how to improve ASW.<sup>36</sup>

While it appears that our current leaders have seen the light – with regards to shortfalls in our ASW skills – these are not new issues or concerns. In 1998, the Navy was aware of ASW force shortcomings and the need for improved integrated ASW training. In one 1998 document the quotes "ASW is finally emerging from a decade of atrophy," and "evidence of the Navy's revitalization of ASW beginning to accumulate," would indicate that we were on the road to improving ASW five years ago. However, little progress in ASW has been made in the past five years. A reduction in the budget for FY-04 for funding of SURTASS and Low-frequency Active (LFA) sonar, and unfunded diesel-powered 'opposition force' initiatives are recent examples of less than ideal ASW support. Others include P-3s being over committed in non-ASW surveillance, neither P-3s or Helicopters updating their processing to the degree of the submarine force, S-3s getting out of the ASW business, and acoustic cuing by fixed and towed assets being less than ideal.<sup>37</sup> The lack of support for ASW exercises and some important missions over the past five years also indicates that progress in improving ASW force skills has been inadequate. One might argue

that 9/11 and the war on terrorism limited the attention focused on ASW. However, I am concerned that there will always be reasons why limited resources should be directed to other areas over ASW – until, of course, the U.S. is forced to face a hostile submarine(s) that attempts to prevent our joint forces from gaining access to some critical location.

### **Less-than optimum use of Resources**

Even with ASW resources so limited and competing missions growing, we are not using these resources wisely. U.S. SSNs have been involved in every Tomahawk strike operation over the past decade. However, except for being able to reload Tomahawks in their torpedo tubes, submarines have brought little unique value to these campaigns in terms of strike capability. The submarine is the platform of choice when access is denied or the threat to surface ships or aircraft prevents them from getting into a desired launch basket. But, in the Afghanistan and Iraq conflicts, surface ship access to the coastal regions was not an issue. While one could argue that an SSN on station provides less force protection worries to the JFC than a surface ship, it is hard to justify the extensive use of submarines in these conflicts for this reason alone. In the most recent Iraq War, eleven U.S. SSNs launched Tomahawks.<sup>38</sup> While one could argue that the country was engaged in war, overwhelming force was intentionally made available, and a certain number of SSNs were required in theater to meet minimum Tomahawk inventory requirements, the large number of SSNs used indicates we may not have made optimum use of our limited resources.

For years, two SSNs have escorted carrier battle groups. Too often, little effective ASW training and coordination occurs with the battle group. RADM W.J. Holland, USN (Ret.), points out that “there won’t be enough submarines to be allocated to battle group operations and provide forward presence that is the submarines’ forte. Submarines in a real



conflict will be working directly for the numbered fleet commander or the naval component commander – not the battle group commander.”<sup>39</sup> Beginning the summer of 2003, a SSN will deploy with an Expeditionary Strike Group (ESG). While the submarine force has underutilized expeditionary warfare capabilities the likely limited use of the SSN in this role during most of the ESG deployment, limits optimum use of this vital asset. Our submarines are multi-mission highly capable stealthy warships. However, it would appear that to some, the submarine force is striving to be all things to all people. Whether this is to justify its requests for funding or a genuine belief that the SSN is the best platform to get the job done, the net effect is the same: too many missions for not enough platforms. As a result, SSNs are not able to spend as much time on ASW operations and training and not enough time is spent preparing the battlespace for the next conflict.

### **Outlook for ASW**

While some key military leaders agree that our ASW skills have declined over the past decade, there are others who would argue that our employment of ASW assets over the same period has been prudent and reflects a proper balance between available resources, current world threats, and our national strategy and objectives. These same leaders would argue that reducing our involvement in ASW exercises and undersea battlespace preparation has not had a significant impact on the United States ability to conduct ASW operations. Many of these same people believe that since our current ASW forces (primarily submarines) have continued to upgrade their sensors and training over the past decade, they are ready to take on the submerged diesel threats, even in the challenging littorals.

There is evidence to suggest that some action has been taken to improve our ASW forces. In one recent twelve month period, the Submarine Force conducted about two dozen

diesel submarine exercises.<sup>40</sup> Guidance is also being revised to provide greater flexibility in operating ASW forces with allies, a measure considered essential to future battlespace preparation.<sup>41</sup> Additionally, to mitigate the reduction in available ASW resources, innovative ideas such as overseas basing of submarines in Guam have been implemented. This will allow these ASW assets to spend more time conducting their mission and less time in transit.

While not sharing the more positive views of our current ASW readiness, I agree that the long-term future of ASW operations by U.S. forces is positive. The plans and systems that are slated for future employment offer the potential to conduct effective ASW concurrently with a naval force's primary mission. "An integrated ASW system that is capable of detecting, classifying, localizing and neutralizing submarine threats quickly and decisively in the littoral maneuver area and supporting SLOCs" is on the drawing board.<sup>42</sup> However, these are far-term improvements and near-term and mid-term ASW capabilities in the current program of record reflect only limited improvements in today's systems.<sup>43</sup> Currently, the lack of real-time tactical sensors and weapons performance assessments that can automatically adapt to changes in the environment, degrade an ASW commander's battlespace awareness and ability to achieve battlespace dominance. Without technological fixes to these problems in the near- or mid-term, the Combatant and Force Commanders need to do more to compensate for these shortcomings.

## **Conclusion**

Today we are not ready to assure *rapid* access to the joint forces in a denied area where hostile submarines have put to sea, despite possessing the most capable submarine force in the world. We have allowed our ASW skills to atrophy to the point that in the future it may take an unacceptably long delay to eliminate or negate a submarine threat. Displays

of our military dominance, as seen in the Iraq War, will continue to push our adversaries towards the pursuit of asymmetric weapons like the diesel submarine. The U.S. needs to commit its ASW forces to this challenge *now* so that we will be ready to defeat quickly this threat in the future. Our leaders need to begin preparing the undersea battlespace *today*.

## **Recommendations**

To mitigate our current ASW shortfalls, the Combatant and Force Commanders should take various steps, including the conduct of a comprehensive review of where we stand with regard to battlespace preparation of the littorals. This review should include an intelligence assessment of what we do and do not know about the littoral undersea battlespace of our potential adversaries. The current and expected undersea capabilities of potential opposing forces should be reviewed and input should be provided by Combatant Commanders on what they view as their biggest near- and mid-term undersea threats. The outcome of this battlespace review should include a prioritized list of areas and forces we need to collect against. This priority list will help Commanders efficiently allocate resources.

Combatant and Force Commanders should conduct a review of ISR missions with emphasis on what missions assets are assigned. With limited collection platforms available, ASW assets will still have to conduct ISR missions. But, employed efficiently these platforms could conduct undersea and area battlespace preparation of high priority locations while also conducting their primary ISR missions. The ISR mission review should look to see if other joint forces, combined forces, or national assets could be assigned to missions in areas where there is little future undersea threat. One source indicated that 80 percent of submarine ISR missions were ‘submarine unique’, suggesting there is room for other national collection assets to conduct some of the ISR missions currently conducted by submarines.<sup>44</sup>

While some submarines may already be conducting ISR missions that include preparing the undersea battlespace, the review would ensure the allocation of ISR missions is optimized.

Combatant and Force Commanders should improve the training of ASW forces, increase the number of realistic ASW exercises, and increase the involvement of combined forces in both these exercises and battlespace preparation operations. U.S. submarines were not fully prepared for unrestricted operations at the beginning of WWII, largely because realistic environments were not created for submarine exercises.<sup>45</sup> To ensure our future forces are better prepared, ASW exercises must be conducted in the same environment of the future threats (littorals), against diesel opposition forces. We will have to work closely with our allies and future coalition partners since the last U.S. diesel submarine was decommissioned in 1989. Increasing the involvement of allies in ASW exercises has other benefits. Some allies have capable ASW forces and combined exercises not only improve the operability of combined forces in conducting ASW operations, they also give the Combatant Commanders a better understanding of allied ASW force capabilities. Consideration can and should be given to allied forces conducting some of the undersea battlespace preparations that U.S. resources can not support. Committing forces to more ASW training, exercises and operations may mean other currently conducted missions will have to be cancelled or reassigned to other forces. However, the current status of our ASW forces and the growing submarine threat mandates that our leaders make these tough decisions.

A review of the employment of ASW forces should also be conducted. Our leaders must optimize the use of these assets to make time for more ASW training, exercises, and operations. Reducing the amount of time SSNs escort battlegroups and limiting SSN strike involvement to that which demands their inherent stealth, are two areas where room for

optimization may exist. This review should keep in mind that SSNs can help meet the minimum in theater Tomahawk requirements while simultaneously conducting battlespace preparation operations far from the area of conflict. Due to their tremendous speed, SSNs can quickly reposition and conduct strike operations. During this review we should look for opportunities where other non-ASW forces can fill roles currently tasked to ASW assets.

Finally, the Combatant Commanders should review their Priority Intelligence Requirements (PIRs) to ensure the appropriate level of priority has been assigned to the intelligence requirements related to preparing the undersea battlespace. Better cuing (resulting from higher priority request) by other assets could help limit the time on station a particular ASW asset would have to spend in order to monitor a short-duration underway. Other joint forces and intelligence assets should be directed to assist our Commanders in the timely deployment of ASW collection assets.

These recommendations have been limited to those which require little or no additional funding. However, the case made justifies other actions, which do require more funding, be taken to improve our ASW forces.

To limit the scope of this essay, I have predominantly focused on submarines as they are the dominant members of our ASW forces. But, as pointed out already, taking on hostile submarines in the future will require a team effort and improvements among all ASW forces are needed and recommended.

The United States needs to have adequately prepared ASW forces to deal with the undersea threats of tomorrow. As long as they take into account the significant time needed to prepare the undersea battlespace, and use the joint and combined forces in the optimum

manner, the Combatant Commanders can ensure our ASW forces will be able to quickly gain access for the joint forces, even when access is denied by a capable submerged threat.

## NOTES

<sup>1</sup> Lyle Goldstein and Bill Murray, "China's Subs Lead the Way," U.S. Naval Institute Proceedings, (March 2003): 61.

<sup>2</sup> Luke Harding, "Moscow Deal Boots Indians Nuclear Arms," Center for Defense Information, 23 Jan. 2000, <<http://www.cdi.org/russia/241-8.cfm>> [16 April 2003].

<sup>3</sup> Pauline Jelinek, "Sub Crew's Tale of Cold War Valor Surfaces At Last," Philadelphia Inquirer, 2 March 2001, sec. A, p. 20.

<sup>4</sup> Katharine K. Shobe, "The Role of the Human Operator in the Submarine," The Submarine Review, (October 2001): 59.

<sup>5</sup> "Admiral: ASW is 'Resource Intensive,' Requires Uses of Ships, Aircraft," Inside the Navy, 7 April 2003, <[http://www.insidedefense.com/secure/defense\\_docnum.asp?f=defense\\_2002.ask&docnum=Navy-16-14-9](http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=Navy-16-14-9)> [13 April 2003].

<sup>6</sup> M.W. Cramer, "Statement on Worldwide Submarine Challenges, 1997," 1997 Congressional Hearings Intelligence and Security, 8 April 1997, <[http://www.fas.org/irp/congress/1997\\_hr/s970408c.htm](http://www.fas.org/irp/congress/1997_hr/s970408c.htm)> [17 April 2003].

<sup>7</sup> F.L. Bowman, "Remarks at UDT Hawaii 2001," The Submarine Review, (January 2002): 7.

<sup>8</sup> "Submarine Officials Confident U.S. Can Address Diesel Sub threat," Inside the Navy, 13 March 2000, <[http://www.insidedefense.com/secure/defense\\_docnum.asp?f=defense\\_2000.ask&docnum=00\\_5173](http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2000.ask&docnum=00_5173)> [13 April 2003].

<sup>9</sup> Nader Elhefnawy, "De-Escalation: A Mission for Russia's Submarine Force?" The Submarine Review, (January 2002): 45.

<sup>10</sup> Harding.

<sup>11</sup> Goldstein and Murray, 59.

<sup>12</sup> Cramer.

<sup>13</sup> Paul Mitchell, "Submarine and Peacekeeping," Journal of Military and Strategic Studies, Spring 2000, <<http://stratnet.ucalgary.ca/journal/2000/article3.html>> [14 April 2003].

<sup>14</sup> Owen R. Cote, Jr. "The Third Battle: Innovation in the U.S. Navy's Silent Cold War Struggle With Soviet Submarines," Navy Public Affairs Library, March 2000, <<http://www.chinfo.navy.mil/navypalib/cno/n87/history/cold-war-asw.html>> [13 April 2003].

<sup>15</sup> Ibid.

<sup>16</sup> "Littoral Anti-Submarine Warfare Concept," Naval Doctrine Command, 1 May 1998, <<http://www.fas.org/man/dod-101/sys/ship/docs/aswncpt.htm>> [15 April 2003].

<sup>17</sup> Ibid.

<sup>18</sup> Mitchell.

<sup>19</sup> Ibid.

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<sup>20</sup> Kurt T. Irgens, "A Study of Conflict Between a Dwindling U.S. Attack Submarine Force Structure Versus Increasing Operational Commitments," (unpublished research paper, U.S. Naval War College, Newport, RI: 2002), NWC 420F92 2002 no.9, 10.

<sup>21</sup> Paul F. Sullivan, "Where's the Nearest Submarine?" Undersea Warfare, (spring 2001): 7.

<sup>22</sup> M. Fages, "The Submarine Force and Technology Today," The Submarine Review, (July 2000): 59.

<sup>23</sup> Ibid.

<sup>24</sup> "Submarine Themes: Force Structure," CNO Submarine Warfare Division website, <<http://www.chinfo.navy.mil/navpalib/cno/n87/themes/forcestr.html>> [14 April 2003].

<sup>25</sup> F. L. Bowman, "Mobile Targets From Under the Sea: New Missions in a New Security Environment." The Submarine Review, (Apr 2000): 7.

<sup>26</sup> F. L. Bowman, "The Future Days: NSL Annual Symposium Remarks," The Submarine Review, (June 2000): 31.

<sup>27</sup> John J. Grossenbacher, "Remarks at the NDIA Clambake," The Submarine Review, (Jan 2002): 19.

<sup>28</sup> "Submarine Themes: Force Structure."

<sup>29</sup> "Atlantic, Pacific Admirals Say Subs Cannot Sustain Current Optempo," Inside the Navy, June 2002, <[http://www.insidedefense.com/secure/defense\\_docnum.asp?f=defense\\_2002.ask&docnum=Navy-15-24-6](http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=Navy-15-24-6)> [13 April 2003].

<sup>30</sup> Thomas B. Fargo, "Pacific Perspective: Speech Before NSL Annual Symposium," The Submarine Review, (July 2000): 48.

<sup>31</sup> "Navy's Shrinking Submarine Fleet Raises Concern For House Subcommittee," Defense Alert Daily Update, 27 June 2000. <[http://insidedefense.com/secure/defense\\_docnum.asp?f=defense\\_2000.ask&docnum=Dalert2000\\_321](http://insidedefense.com/secure/defense_docnum.asp?f=defense_2000.ask&docnum=Dalert2000_321)> [14 April 2003].

<sup>32</sup> "Atlantic, Pacific Admirals Say Subs Cannot Sustain Current Optempo."

<sup>33</sup> "In RIMPAC 2002, Sailors Modify Tactics To Fight, Detect Diesel Subs," Inside the Navy, 22 July 2002, <[http://www.insidedefense.com/secure/defense\\_docnum.asp?f=defense\\_2002.ask&docnum=Navy-15-29-3](http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=Navy-15-29-3)> [14 April 2003].

<sup>34</sup> "Doran: Advances in Diesel Sub Technology Require ASW Emphasis," Inside the Navy, 20 January 2003, <[http://www.insidedefense.com/secure/defense\\_docnum.asp?f=defense\\_2002.ask&docnum=Navy-16-3-12](http://www.insidedefense.com/secure/defense_docnum.asp?f=defense_2002.ask&docnum=Navy-16-3-12)> [15 April 2003].

<sup>35</sup> "Atlantic, Pacific Admirals Say Subs Cannot Sustain Current Optemp."

<sup>36</sup> "Admiral: ASW is 'Resource Intensive,' Requires Use of Ships, Aircraft."

<sup>37</sup> Fargo, 49.

<sup>38</sup> "Coalition Forces Continue Tomahawk Launches," Navy Newsstand, 22 March 2003, <[http://www.news.navy.mil/search/display.asp?story\\_id=6466](http://www.news.navy.mil/search/display.asp?story_id=6466)> [15 April 2003].



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<sup>39</sup> W. J. Holland, Jr. "Acquiescence is Agreement: Reflections on Submarine Roles and Missions for the Submarine Technology Symposium," The Submarine Review, (July 2001): 45.

<sup>40</sup> Grossenbacher, 16.

<sup>41</sup> Ibid.

<sup>42</sup> "Littoral Anti-Submarine Warfare Concept."

<sup>43</sup> Ibid.

<sup>44</sup> A. H. Konetzni, "Statement, to House Armed Services Committee," 27 June 2000, <<http://armedservices.house.gov/testimony/106thcongress/00-06-27/konetzni.html>> [13 April 2003].

<sup>45</sup> W. J. Holland, "Submarines Utility Beyond Afghanistan," U.S. Naval Institute Proceedings, (July 2002): 66.

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